



Northwest Power and Conservation Council Meeting Notes June 11 and 12, 2019 Portland, Oregon

Ready or not, utilities are being propelled into providing energy in a more decarbonized world. Council Members received updates on Washington State’s new clean energy legislation, including new standards for appliances and buildings. The Energy Trust of Oregon provided data on recent record energy efficiency gains and described why maintaining that level of savings is unlikely.

Chair Jennifer Anders led the meeting with all Council Members in attendance. A replacement for Montana Council Member Tim Baker has yet to be named. The next Council Meeting will be July 16 and 17 in Butte, Montana.

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The Agenda

Three new clean-energy bills adopted by Washington Legislature

Representatives from Washington State Energy Office brought Council Members up to speed on three pieces of legislation that were adopted this past session, which will affect resource development decisions in the regional electric system:

- SB 5116 – Clean Energy Transformation Act (CETA)
- HB 1444 – Appliance Standards
- HB 1257 – Clean Buildings

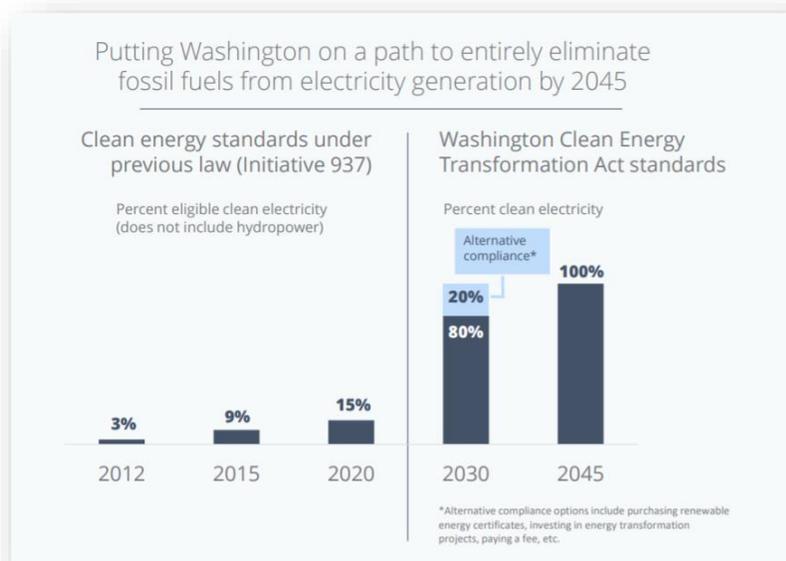
According to a press release by Governor Jay Inslee, while Washington has some of the cleanest electricity in the nation, electricity generation is the third-highest emitting sector in the state, after

transportation and buildings. SB 5116-CETA seeks to eliminate fossil fuels from electricity generation by 2045.

To achieve a 2030 benchmark of 80%, utilities must replace coal-based resources with carbon-neutral energy resources, use hydropower resources more efficiently and effectively, and increase overall energy efficiency. Of note is that incremental hydro from federal projects will be eligible starting in 2020.

All renewable electricity has to be verified and documented using renewable energy certificates, explained Dr. Glenn Blackmon, Washington’s energy policy manager.

Beginning in 2022, utilities need to bulk up their integrated resource plans to show how they’re getting to the new standard. Blackmon said Washington’s Department of Commerce is required to assess the statute’s impact on reliability and they will be asking for the Council’s advice in that regard. The intent is that natural gas will be used in the medium term to help generate electricity with new technology providing a path to serve electric load in time to meet the 2045 standard.



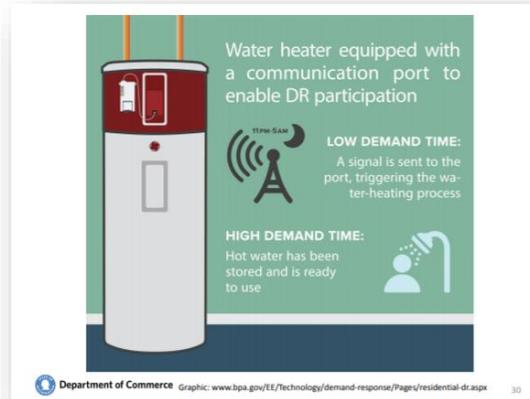
The appliance standard legislation is an update from appliance standards last revised in 2009, said Dr. Sarah Vorpahl, senior energy policy specialist.

The bill is aimed at reducing energy and water usage. Most standards are effective for products manufactured starting in 2021 and apply to 17 different product types. It also provides the first design requirements in the nation for electric storage water heaters.

The objective of the clean buildings legislation is to maximize reductions of greenhouse gas emissions from the building sector. It sets state energy performance standards for commercial buildings, provides an incentive program, and sets standards for natural gas efficiency and renewables. It also covers electric vehicle charging infrastructure requirements for new buildings and makes changes to energy code development criteria.

Mandatory compliance begins in 2026, with fines for noncompliance of \$5,000, plus up to \$1 square foot per year. Chuck Murray, senior energy policy specialist, said he expects a lot to happen in the rulemaking phase later this year.

In response to Washington Council Member Pat Oshie's question about compliance costs, Blackmon said they don't want to drive rate increases of more than 2% per year for compliance costs. Investor-owned utilities will need protection for their customers, he said.



Oregon Member Ted Ferrioli asked if this policy would end up driving people toward nuclear power due to the intermittent nature of wind and solar. Blackmon said he thinks the policy drives the public toward nonemitting resources that will require looking at a lot of different options.

Energy Trust and utilities must adapt to a new energy future

Mike Colgrove, Energy Trust of Oregon (ETO) executive director, forecasted market and public policy constraints will cause utilities and even ETO to consider how to deliver their products and services differently. He sees a significant impact in the way utilities do business from the potential adoption of a statewide carbon policy in Oregon, to higher efficiency in building codes and standards. And the prioritization of equity, with better support for distribution program planning to deal with capacity issues, is on the horizon.

Colgrove appeared before the Council to share ETO's five-year strategic plan. After a public comment period this summer, the board of directors will consider the final proposed plan at its October 16 public meeting. "We believe these changes will unfold slowly in the next few years, but that the impact will be significant," Colgrove said. Beyond the next five years, we see some very different environments, in terms of a carbon market and carbon pricing.

Utilities are adapting to constraints on their systems and the pressure of reducing their greenhouse gas emissions. And natural gas utilities are adapting to a new role in a carbon-constrained future. ETO, which supports investments in energy efficiency and access to renewable energy, is an independent, nonprofit organization serving 1.6 million electric and natural gas utility customers in

Oregon. It provides information and cash incentives for residential, commercial and industrial sectors.

Colgrove said in 2017, ETO achieved a record savings of 60 aMW. The savings dipped a bit last year, but it was still high at 54 aMW. He said ETO delivers savings at 2.8 cents per kWh — less expensive than what utilities are getting. The success shows the challenges to the organization posed by the maturation of the LED lighting market.

Assuming a federal law stands next year, LEDs and CFLs will be the only types of lighting that customers can buy in stores, he said. Once that happens, they will be doing away with residential incentives, but there are still opportunities in the commercial space.

Colgrove said they continue to track emerging energy efficiency technologies, but we're not expecting a new LED-type of breakthrough in the next five years. Still, as ETO looks out

over five years, there is still a lot of cost-effective savings to be obtained. They have served a lot of large customers and still have mid-to-smaller sized businesses to achieve savings. But then the project sizes become smaller. The impact on ETO is that savings targets will be harder to achieve.



Interesting outcomes in climate change models explored at OSU

There are aspects to climate change that are beyond human control, but regarding the level of greenhouse gas emissions, there are three earth system models where humans can have an impact. Dr. David Rupp, assistant professor at Oregon State University's Senior Research College of Earth, Ocean and Atmospheric Sciences, shared an overview of possible outcomes.

One future is a geopolitically fragmented world with little international cooperation. Another future limits global warming to 2°C, but it is far from utopian.

A best outcome is a future that pursues a cost-minimizing pathway to stabilization. It assumes that all nations of the world undertake emissions mitigation simultaneously and effectively. It's also a scenario that most likely isn't happening, Rupp said. It's fair to say that the world currently is in the

first, fragmented scenario, but hopefully it will move to the second before it's forced to in a painful way.

Rupp looked at 2030 climate projections for the Columbia River Basin. There is a large range in temperature changes from 1 degree to 6.5 degrees. Precipitation will increase. It shows less rain in the summer with more in the winter and spring. He said, climate change's impacts on fish and wildlife will be a degradation of fish habitat due to increasing peak flows, earlier streamflow timing, reduced summer low flows, and warming summer stream temperatures.

NW Hydroelectric Association highlights areas of development

Jan Lee, who served as executive director of the Northwest Hydroelectric Association (NWAHA) until her retirement last February, appeared before the Council with Brenna Vaughn, the association's new executive director, to share where hydropower has been and opportunities going forward.

Lee mentioned a 2014 analysis by NWAHA that looked at hydropower's potential in the Pacific Northwest between 2015 and 2035. That report totaled 3,200 MW of capacity and 23,000,000 MWhs.

Raising the profile of all of hydro's benefits is an area that could be improved. This includes the life of a hydro project, which is 50–100 years, compared to 20 years for other generating projects.

Vaughn talked about projects underway in the region. She said the 2014 report identified 10 sites for hydropower development of non-powered dams.

Currently, one has an active license and three are in the permitting process. In addition, the U.S. Department of Energy (DOE) published its 2018 market report and trends, which showed five capacity upgrades in the region totaling 636 MW of generation. Looking at pumped storage, there are now seven active FERC permits in the Northwest.

Clean energy: The Northwest way of life



Life in the Northwest is shaped by the Columbia River and all it has to offer. From clean energy to clean air, this iconic waterway is forever giving.

It fuels the cleanest power system in the nation.

It makes deserts bloom. It's the cleanest way to move cargo.

It feeds our economy. It's why we live here.